WHAT IS CLAIMED IS:

1. A pulse battery comprising an electrode having at least two electroactive materials as components of the same electrode, wherein said electroactive materials have different discharge potentials, charging potentials and voltage outputs, a first of said materials providing a voltage output of a predetermined level and a second of said materials lowering the overall charging voltage of said electrode below that of said first material, and wherein said second material is present in an amount of at least 5 weight percent.

2. A pulse battery according to claim 1, comprising a negative electrode having at least two electroactive materials as components of the same electrode, said materials being selected from the group consisting of zinc, gallium, tin, cadmium, lead, indium, bismuth and metal hydrides.

3. A pulse battery according to claim 2, wherein said electrode is a mixed electrode having a pair of electroactive materials, said pair being selected from the group consisting of zinc/tin, zinc/lead, zinc/indium, tin/lead and metal hydride/lead.

4. A pulse battery according to claim 2, comprising a positive electrode having at least two electroactive materials as components of the same electrode, said materials being selected from the group consisting of nickel hydroxide, manganese dioxide and silver oxide.

5. A pulse battery according to claim 1, wherein said two electroactive materials are present in a ratio to each other of between 70:30 and 30:70 weight percent.

6. A pulse battery according to claim 1, wherein said two electroactive materials are present in a ratio to each other of between 40:60 and 60:40 weight percent.

7. A pulse battery according to claim 2, in parallel circuit with an energy battery, as herein defined.

8. A pulse battery according to claim 1, wherein said electrode is a mixed electrode comprising at least three electroactive materials.

9. A battery power supply, comprising:

a pulse battery with a mixed electrode having at least two electroactive materials as components of the same electrode, said electroactive materials having different discharge potentials;

an energy battery connected in parallel with said pulse battery;

a circuit formed by said interconnected pulse and energy batteries being connectable to a load such that when said load reaches a first level, said load is satisfied primarily by a power capacity of said energy battery and when said load reaches a second level, said load is satisfied substantially by a contribution by said pulse battery.

10. A power supply as in claim 9, wherein said pulse battery is configured such that it is charged by said energy battery at times when said load is at said first level.

11. A power supply for an appliance characterized by a time-varying load, comprising:

first and second batteries connected in parallel;

said first battery providing substantially all of the energy requirement of said load over a discharge history of said power supply;

said second battery being configured to discharge during intervals of time in which said load is above a first level and to be recharged by said first battery when said load drops below said first level, whereby a power capacity of said first battery is supplemented by a power capacity of said second battery by effectively leveling the load demanded by said first battery.

12. A power supply as in claim 11, wherein said second battery obtains its ability to discharge and recharge as claimed by virtue of its having a mixed electrode having at least two electroactive materials as components of the same electrode.

13. A battery power supply, comprising:

a pulse battery with a mixed electrode having at least two electroactive materials as components of the same electrode, said electroactive materials having different charging potentials;

an energy battery connected in parallel with said pulse battery;

a circuit formed by said interconnected pulse and energy batteries being connectable to a load such that when said load reaches a first level, said load is satisfied primarily by a power capacity of said energy battery and when said load reaches a second level, said load is satisfied substantially by a contribution by said pulse battery.

14. A battery power supply, comprising:

a pulse battery with a mixed electrode having at least two electroactive materials as components of the same electrode, said electroactive materials having different charging potentials;

an energy battery connected in parallel with said pulse battery;

a circuit formed by said interconnected pulse and energy batteries being connectable to a load such that when said load reaches a first level, said load is satisfied primarily by a power capacity of said energy battery and when said load reaches a second level, said load is satisfied substantially by a contribution by said pulse battery.

15. A battery power supply, comprising:

a battery connected in parallel to an electrical energy storage device;

said battery and electrical energy storage device being connectable to a load;

said electrical energy storage device being capable of storing electrical energy from said battery when said load is below a first level and of releasing said electrical energy when said load is above said first level;

said electrical energy storage device dissipating energy from said battery when said load is substantially zero;

a control with a sensor connected to detect a current level said load;

a disconnect switch connected between said electrical energy storage device and said battery to disconnect said electrical energy storage device from said battery, selectively;

said control configured to disconnect said electrical energy storage device from said battery responsively to said disconnect switch.

16. A power supply as in claim 15, wherein said control is configured to disconnect said electrical energy storage device from said battery when said load is below said first level.

17. A power supply as in claim 15, wherein:

said battery includes a primary portion and an auxiliary portion connectable in series by an internal switch;

said internal switch being connected to said control and switched in concert with said disconnect switch to provide a lower voltage of said battery when said load is below said first level.